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Adaptation of an Evidence-Based Intervention to Improve Preventive Care Practices in a Federally Qualified Health Center in Appalachian Kentucky

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Summary

University collaboration with a federally qualified health center resulted in adaptation and implementation of an evidenced-based intervention promoting preventive care, including cancer screening. Here, we focus on strategic planning, formative research, staff commitment, patient perceptions, data refinements, and organizational investments; successes, lessons learned, and challenges are also discussed.

Keywords

Appalachian region; early detection of cancer; preventive health services; community health centers; office visits

To improve population health and well-being, it is important to disseminate and implement evidence-based health interventions. This approach is especially critical to cancer, the second-leading cause of death in the United States.[1] Much of the cancer burden could be affected by improving population adherence to cancer screenings, including mammography, Papanicolaou (Pap) testing, and colorectal (CRC) and lung cancer screening.[1–5] Therefore, we must develop coordinated evidence-based initiatives that intervene at the patient, provider, and health care system points of influence.[6]

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Such initiatives must focus on populations that experience elevated cancer rates, including residents of the medically underserved, rural, economically stressed communities of Appalachian Kentucky.[7,8] In response, the University of Kentucky (UK), a collaborating center of the Cancer Prevention and Control Research Network, a Centers for Disease Control and Prevention-funded program, aims to accelerate adoption of evidence-based programs in rural underserved communities. Specifically, UK formed an academic-community partnership with White House Clinics (WHC), a federally qualified health center (FQHC) in Appalachian Kentucky to adapt, implement, and evaluate an evidence-based proactive office encounter (POE) intervention aimed at improving patient adherence to preventive care practices, including cancer screenings. White House Clinics offers primary care, dental, behavioral health, and pharmacy services to low-income, under- and uninsured residents in a five-county area.[9] In 2015, WHC served over 30,500 patients with 110,820 visits.

Proactive office encounter

The POE intervention is a systematic approach to ensuring patients are up-to-date with preventive care guidelines by assessing their status during every encounter; this preventive health assessment occurs *in addition to* the original purpose of the visit (e.g., acute illness, chronic disease maintenance). Developed by Kaiser Permanente (KP) Southern California Region, POE is designed to proactively identify and close preventive care gaps through strategic use of information technology (e.g., electronic medical records [EMR]), new workflow development, and continuous quality improvement (QI).[10–12]

Using cancer screening as an exemplar, the POE model provides a medically tailored, evidence-based protocol for each patient from pre-encounter to post-encounter. Preencounter activities include reviewing a patient's EMR for cancer screening completion and creating a summary of the patient's recent screening history and socio-demographic characteristics, allowing the provider to easily address health needs and order referrals during the appointment rather than spending the visit searching for information. Prior to the visit, staff may prepare the room for a Pap test or distribution of a stool collection kit, in addition to gathering supplies for the scheduled appointment. During the appointment, the provider has more time for shared-decision making with the patient and encouraging participation in the recommended cancer screening(s). Arrangements are also made for colonoscopy, mammography, and/or lung cancer screening at local facilities. Post-encounter protocols track patients' screening completion, receipt of results, and navigation to specialty care for abnormal findings. Smoking cessation, immunizations, diabetes, HCV and HIV screening, and/or controlled substance protocols are also incorporated into the encounter as needed.

Benefits of providing preventive services via the POE model may be observed in improvement of the following measures: continuity and convenience of care, screening rates, performance on quality measures, patient/provider satisfaction, closure of care gaps (i.e., procedure within 30 days of appointment), health care costs, and lives saved.[10–12] The foundational goal of FQHCs addressing poor health outcomes among those with limited

access to care, lack of transportation, and geographic isolation prevalent in rural America[13] also makes the POE model particularly appealing. This model expands the reach of an acute or maintenance visit to include preventive care for which a patient with limited access might never seek on their own.

POE adaptation for WHC

Federally qualified health centers are accustomed to evaluating programs and services in terms of the unique, high-resource needs of their communities, requirements to serve clients regardless of their ability to pay, and the need to increase access to supporting services.[14] Although the POE model provides many benefits, implementation requires an even greater shift towards transparency, strategic planning, and evaluation, built on engagement and support from FQHC administrators, clinicians, and patients.

Collaborators engaged in a multi-step process to adapt the intervention to the FQHC setting of WHC given its infrastructure, financial position, EMR system, and personnel. To guide the adaptation and identify facilitators and barriers to implementation, focus groups were held with WHC leadership, clinicians, and staff (N = 14); 12 WHC patients were also interviewed. Providers and staff were receptive to the general premise of the POE model, but noted concerns about time commitments, motivating patients to adhere to recommendations, and patient reactions to addressing multiple medical concerns in one visit. Overall, patients were supportive of a proactive discussion with their providers about cancer screening, but expressed concerns about screening-related expenses.

Second, through strategic planning, the POE model was first implemented in only four of the eight WHC locations in order to evaluate the process on a smaller scale, documenting successes and challenges and developing QI strategies to correct problems before launching organization-wide such as brainstorming, effective team meetings, trainings, and conducting a Failure Modes and Effects Analysis (FMEA) of the overall process.[15] These strategies were implemented simultaneously across clinics and monitored by WHC leadership. Because the change to the work culture was significant in its scope, QI activities were conducted on a routine basis to ensure that POE implementation was successful. Furthermore, the POE model was first implemented with previously scheduled appointments (i.e., at least 48 hours in advance) for adult patients. The clinics hired four care coordinators to review patients' charts and complete care guideline checklists for providers to review with patients.

Third, in addition to updates at monthly staff meetings, a workflow training—reflective of each clinic's environment—was developed to secure provider and staff commitment, address barriers to implementation, articulate roles and responsibilities, review standing orders, and practice patient-provider communication strategies. All nursing staff received motivational interviewing (MI) training to begin important health-related conversations with patients before the provider arrived.

Finally, POE-related refinements were integrated into WHC's EMR system, including customization of the care guidelines template and development of a report that allowed for

quick identification of care gaps prior to patient visits. White House Clinics revised and expanded its standing orders and implemented team huddles to review daily patient census reports. This allowed support staff to efficiently address as many care gaps as possible during patients' visits. Additionally, WHC purchased add-on software to evaluate programmatic impact and patient adherence to care guidelines.

Successes, challenges, and lessons learned

In January 2015, WHC implemented the POE model within four of their eight clinics and initiated the process with additional sites in November 2015. As of December 2015, over 10,000 WHC patients have been evaluated under the POE model. The intervention has encouraged WHC providers and staff to promote preventive care practices, including cancer screenings. Compared with 2014 Uniform Data System measures, 2015 data indicate breast and CRC, HIV, and HCV screenings, along with influenza, pneumonia, and shingles vaccination rates have increased among WHC patients. For example, between 2014 and 2015, WHC had a 36% increase in CRC screening and conducted five times the number of HIV screenings (831 vs. 4,371) and eight times the number of HCV screenings (378 vs. 3,334). Based on the program's initial success, in winter 2016, providers championed the inclusion of osteoporosis and lung cancer screening as well as human papillomavirus vaccination into the POE protocol.

The POE model was seamlessly integrated into patient care rather than directly introduced to patients. However, some patients indicated during interviews that they noticed a change in care during visits post-POE implementation. To inform patients about the model more fully, WHC is currently developing a marketing plan for the POE model, including creation of a patient/provider video that introduces POE and its purpose; the video will be added to the television loop in WHC waiting rooms and posted on their website and social media accounts. The POE model has also been pilot-tested with WHC's pediatric population, but continues to undergo refinements addressing care guidelines for different age groups. The pediatric model focuses on items included in well-child visits, including vaccinations; lead, vision, and hearing screenings; and obesity risk assessment and counseling.

In addition to examining outcome measures, an extensive evaluation of the POE implementation process is being conducted, including development of a process map outlining the planning, adaptation, and implementation of the POE model within WHC; qualitative interviews (N = 15) with individuals charged with oversight of the intervention (i.e., Chief Executive Officer, Medical Director, Enabling Services Line Manager) as well as staff affected by the POE process (i.e., care coordinators, providers, nurses); interviews with WHC patients to assess perceptions of the POE model and its impact on their cancer screening behaviors (N = 26); a survey among providers (N = 17) in the initial four clinics to determine providers' level of satisfaction with the intervention; and a FMEA exercise[15] to identify where failures may occur in the process and solutions to preempt them. The evaluation has allowed for development of more accurate standard operating procedures, continuous improvement of POE implementation, and the development of a POE implementation toolkit to assist with future dissemination to other clinical settings.

Regarding the adaptation of POE to WHC's infrastructure, lessons learned (Box 1) include understanding the importance of staff and provider communication, particularly during initial implementation when the volume of patients with identified care gaps is greatest. Staff relationships with providers, especially nursing staff, is an important aspect in the development of new workflows. Provider commitment impacted the success of the team huddling process as some providers were initially skeptical of the process because they felt it was too time consuming or that they already understood their patients' needs. Similar to the experience of KP, we found that staff felt greater commitment to the new workflow after understanding the information they were providing to the clinical team was directly affecting patients.[10] Strong administrative leadership also created a focus on organizational collaboration rather than allowing individual challenges to derail the implementation process, which was also reported by KP.[11] In addition, integration of standing orders within the POE model empowers staff to proceed within their scope of practice rather than waiting on the physician to direct the next step of the patient's visit. Nurses' experiences with MI indicated patients' had additional needs during appointments. Accordingly, WHC is implementing a Patient Engagement service line focusing on patient education and assisting patients with self-management goals to encourage preventive care. Finally, clinic cycle time did not increase significantly although patients were engaged in additional procedures during office visits. Initially, some providers were concerned that additional screenings may increase appointment times and decrease the availability of appointments. However, providers found that POE facilitated increased access to patient information and decreased time spent searching for it during appointments.

Noted challenges (Box 1) include a change in workplace culture,[11] extracting project data from the EMR system, cyclical patterns in patient care and related clinic demands (e.g., back-to-school appointments, influenza season) that increased workload during the initial implementation phase, and differences in care guidelines recommended by national sources requiring synthesis and discussion by staff, including assessments of which recommendations major payor sources will cover/reimburse. White House Clinics also noted additional challenges such as working with patients who were resistant to additional preventive services due to perceived and real costs and/or perceived need. For example, some patients thought they were not at risk for HCV or HIV, and were reluctant to pay for the associated screenings even though the tests were guideline recommended.[16,17] This variation in challenges may be due to WHC's status as a FQHC and the population they serve as well as the limited resource availability in comparison with a large health care system such as KP.

In summary, POE implementation requires a transition from a reactive to proactive approach in providing preventive health services, including cancer screenings. Preliminary results suggest the implementation of POE may improve cancer screening and other health outcomes among WHC's patient population. With continued success, POE has the potential to improve patient care, close care gaps, decrease health care costs, and save lives. As illustrated in this article, academic-community partnerships can facilitate the translation of novel evidence-based programming into effective and efficient clinical and public health practice in rural communities.

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Box 1. WHC SUCCESSES AND CHALLENGES WITH POE IMPLEMENTATION

Successes	Challenges
• Encouraged WHC providers/staff to promote preventive care practices. • Increased screening rates post-POE implementation (e.g., breast, colorectal, HIV, HCV). • Increased vaccination rates post-POE implementation (e.g., influenza, pneumonia, shingles). • Continual addition of preventive care guidelines (e.g., osteoporosis and lung cancer screenings). • Nursing and clerical staff feel more involved with improving patient health. • Maximizes existing resources through use of standing orders and clinical staff scope of practice.	• Extracting needed data from the EMR system. • Increased workload during the initial implementation phase. • Synthesizing differing guidelines for preventive care measures. • Assessing preventive care coverage and reimbursement by major payors. • Changing workflows and overall workplace culture. • Patient reluctance to pay for additional preventive screenings (based on perceived and real costs and/or perceived need/risk).